FO - 213.04

CRITERIA FOR SELECTION OF TROUT STREAMS WITH GEAR RESTRICTION REGULATIONS

Under the authority of Section 48701(m), as amended, being Sections 324.48701(m) of the Michigan Compiled Laws, the Director of the Department of Natural Resources on November 7, 2003, ordered that this criteria be adopted and used in the selection of gear restricted trout streams.

Introduction

Michigan can boast of 36,000 miles of rivers, streams and creeks, of which over 12,000 miles harbor significant populations of trout. In the early 1950's, Dr. Albert Hazzard, well-known fisheries researcher and then head of Michigan's Institute for Fisheries Research, inventoried these trout streams and identified those that were "the best" and suitable for "flies only" regulations. To qualify, the streams needed to have strong, self-sustaining trout populations, have good insect hatches, and be wadeable and wide enough to permit fly-casting. Hazzard found approximately 1,200 miles that met these criteria.

Prior to 2002, fisheries managers were restricted to 100 miles of trout streams on which gear restrictions could be applied. The restriction, contained in PA 451 of 1994, had been in place for many years, dating back to the early 1970s. This changed in 2002 when PA 434 went into effect. Among other provisions, PA 434 increased the number of available miles from 100 to 212 and mandated that the Department prepare a set of criteria to evaluate potential streams for application of gear restriction regulations. This document fulfills that obligation and provides a process and a set of criteria that will be used to 1) evaluate existing waters in stream Types 5, 6, and 7 and 2) evaluate potential streams for inclusion in one of the three available gear-restricted categories.

The information presented here was developed as a tool for fisheries managers to use in the evaluation of trout streams, and to help decide whether gear restriction regulations may be appropriate on those streams. By design, biological and physical conditions of the streams form the basis of the criteria. However, it is clearly recognized that other aspects such as social, geographical and even political issues must be considered prior to making a final decision on a particular waterway. Those involved with the development of the criteria understood that it was important to set up strict enough guidelines to narrow the scope of potential/satisfactory streams, while still allowing managers some flexibility in their decision making.

History of criteria

The "origin" for the criteria dates back to the 1980s when the Division collaborated with constituent groups on an effort to develop a user-friendly Blue Ribbon Trout Streams brochure. At the time, virtues such as stream productivity, fishibility, access, and wadeability were identified as some of the more important features of streams commonly considered "blue ribbon" quality. Recent efforts to develop criteria were renewed during the 1998 Inland Trout/Salmon regulation review process as the Division worked with the external Coldwater Steering Committee [Anglers of the Au Sable, Trout Unlimited, Michigan United Conservation Clubs, Michigan Steelhead and Salmon Fisherman's Association, Federation of Fly Fishers, Michigan River Guides Association, and others). Starting with the "rough" framework of criteria mentioned above, the Committee produced several drafts over the course of the following 2-3 years. Anticipating a legislative attempt to modify the number of miles available for gear-restriction regulations, the Division shaped the set of criteria in 2001 into its current form. Reviewed several times both internally (FD biologists) and by constituent groups (Coldwater Steering Committee), the draft criteria were presented in October 2002 at the statewide Biologist Meeting in Grayling. The Internal Coldwater

Steering Committee met in December 2002 to incorporate comments from the October meeting into the final draft and prepare a final set of conditions for evaluation.

Philosophy of gear-restricted waters

In 2000 Fisheries Division implemented a set of significant changes to inland trout and salmon regulations. The supporting documentation that accompanied the changes included background information defining the categories (Types) of streams and the rational for each Type. Representing a small yet highly significant portion of the total trout stream mileage, the gear restricted categories included a general philosophy behind the use of gear restrictions in fisheries management. Following are excerpts from that document, which are applicable to this discussion:

> *Public values concerning angling appear to have evolved considerably since Michigan's fishing regulations were last thoroughly reviewed in the late 1970s and early 1980s. [More] anglers fish primarily for the recreation. These anglers release all or most of the fish they catch even when harvest is legal. These practices are widely associated with organized trout and bass anglers, but are also practiced by other anglers. Catch and release fishing has become more popular for species such as stream trout, bass, muskellunge, northern pike, and stream-run steelhead.*
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> *More anglers also appear to have increased their emphasis on catching large fish. Amongst some anglers, there appears to be a greater emphasis on challenge and excitement as important benefits of the angling experience. Both higher catch rates (quantity) and larger fish sizes (quality) seem to be key factors in enhancing challenge and excitement. Consequently, because angler values are more diverse than ever before, Fisheries Division is committed to providing diverse fishing opportunities for all types of anglers.*
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> *Recreational fishing gear and methods are generally restricted for one of three reasons:*
> - *To enforce principles of fair chase by assuring that fish are captured individually and with sufficient difficulty;*
> - *To prevent the spread of bait species into waters where they may be undesirable;*
> - *To reduce mortality of fish which may not be legally harvested.*

The Division is committed to the long term protection of rare and valuable resources and to identifying those streams that can produce "exceptional" fisheries. It is generally accepted that some combination of gear restrictions, season restrictions and reduced possession limits are critical to the success of these efforts. In looking at available state resources, certainly the division strives to develop those waters with stable, naturally-reproduced fisheries. Still, other waters in varying stages of rehabilitation may provide exceptional fisheries without natural reproduction (relying on stocking to produce expected fishery). These are unique resources that
have most of the characteristics necessary to produce an exceptional fishery, and long term protection would be desirable in these situations.

Special regulations water are not only very popular, they can substantially increase the public value generated from Michigan's outstanding array of trout streams. However, the response of the trout populations of any of these streams to special regulations will be governed to a large degree by a set of key biological conditions. It is important that these biological considerations be carefully weighed in the designation process because if they are not right, they will likely frustrate public expectations for improvement in trout size and abundance. Only a portion of these are biological conditions favorable for substantial improvement in trout size and abundance. Many are as good as they can be, or nearly so, under the protection of our current trout fishing rules.

The biological criteria that need to be considered are simple and common to nearly all animal populations. They include rates of reproduction and recruitment, growth, and mortality (both natural and fishing). It is our recommendation that before selecting any waters for special regulations, no matter how popular or well suited they may seem on the surface, that they be screened by these important biological criteria. Only in that way can we fairly assess not only what regulations should be imposed, but also what changes they are likely to produce.

Applying the criteria

As previously mentioned, this purpose of this document is to assist fisheries managers in their evaluation of streams for inclusion in stream Types 5, 6, and 7. The process we propose is to solicit from our field personnel candidate waters that not only qualify as productive and appealing trout streams, but whose trout populations would be likely to prosper under certain special regulations because of favorable rates of growth, survival and recruitment.

The criteria are set up as a narrative and accompanying flowchart. Each "step" of the flowchart presents a question to be answered about an individual stream/reach. The first four (4) questions represent biological conditions/factors that pertain to the respective stream. Depending on the response to each question, managers will advance to the next question or to a "STOP" command. The "STOP" command necessarily means that the stream does not meet the minimum criteria and should not be considered as an option. The exceptions to this rule are if Natural Mortality is high, or if Fishing Mortality is low, then other considerations (such as geographical, political or social factors) may be considered before deciding whether to move the stream forward in the screening process. Managers must first decide whether a stream meets the Phase 1 and Phase 2 criteria. If so, other issues should then be taken into account, and these are described in further detail in the narrative portion that accompanies the flowchart.

Other considerations

Social and Political Concerns

Aside from the biological and physical factors that must be considered in determining whether or not a stream should be included in Types 5, 6, or 7, there are other issues that are important, even critical, to the discussion. Political realities and social pressures/nuances at the local, regional or state level are non-tangible criteria that factor into the equation. Certain user groups and many anglers in general favor the concept of moving additional waters into the categories that have gear restriction regulations. For others, further restricting fishing opportunities based on tackle type is considered unfair, overzealous, and/or not necessary to "protect" any fisheries.

This last point has some validity. During the 1998-2000 review of Inland Trout/Salmon regulations, the Division made it clear to anglers that for all practical purposes *existing* trout/salmon regulations on inland streams protect trout biologically. We suggested that by placing more restrictive regulations on stream reaches [gear restrictions], we could capitalize on and develop unique and diverse fishing opportunities throughout the state. This concept is actually part of the philosophical argument FOR gear-restricted categories.

While the philosophy is sound, not all anglers support or agree with it. For example, take a stream reach that traditionally has been "all tackle" and/or supported a fishery for a certain species. If the stream reach meets the established biological criteria and a manager proposes to include that reach as a Type 7, the proposal may spark local or regional opposition simply based on it moving into a restricted gear status. Or, due to the nature of the category (Type 7=C/R) anglers may oppose it on the grounds that the harvest restriction is extreme. In this case, however, the anglers may support it being placed into Type 6 (artificial gear only).

Once a stream is identified as a candidate for Types 5, 6, or 7, backlash also should be anticipated from riparian landowners living along all-tackle streams. This recently occurred in 2000 when the Division proposed to move the upper Manistee River reach into Type 5. While riparian landowner interests/comments/rights carry no more significance than the general public, reaction at some level should be anticipated.

Managers also should be on the lookout for politically sensitive areas. A good example is the recent decision to include Johnson's Creek, Wayne County, in the Type 6 category. Prior to PA 434 of 2002, Johnson's Creek would not have been placed in this category strictly on the basis of biological criteria. However, recent legislation mandated that the stream be placed in one of the gear-restricted categories, and the decision was made to place it in Type 6.

These are just a few examples of social considerations that must be pursued, understood and considered prior to a decision on including a stream reach in Types 5-7.

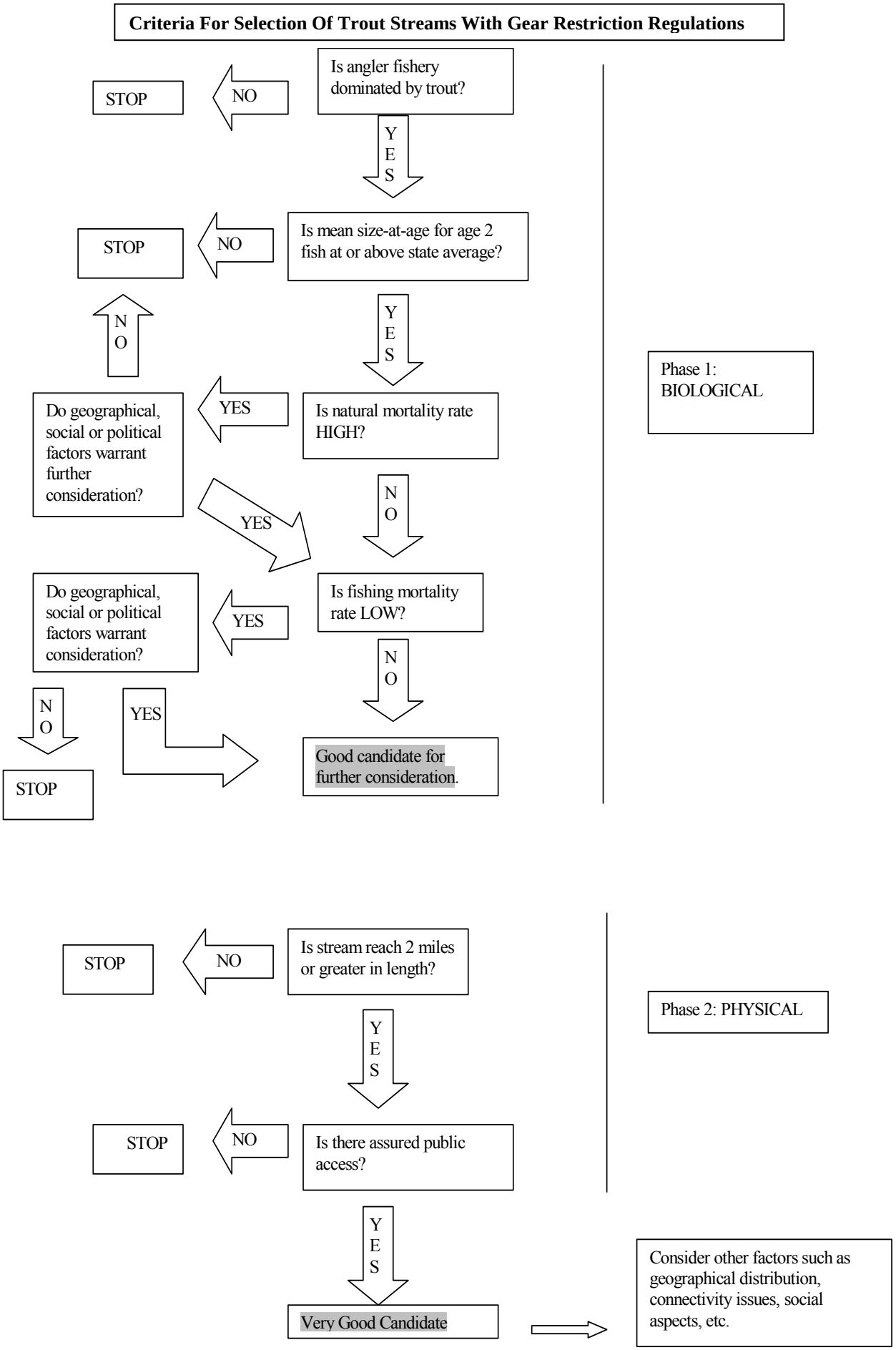
Geographical Diversity

Michigan is blessed with an abundance of cold waters, and anglers recreate in all corners and latitudes of the state, despite a population centered in southeast Lower Michigan. Geographical diversity should be considered when establishing additional gear restriction trout fishing opportunities, both regionally (within a particular Management Unit) and on a statewide basis. Thus, as managers evaluate streams within their respective Units, the decision-making process should take into account such things as the number of gear-restrictions already established within the Unit and the potential use (increase/decrease) of the stream under the proposed regulation. However, in order to avoid the "if we build it, they will come" situation, the consideration of geographical distribution of streams with gear-restrictions should not drive the decision. Rather, it should be used only after the biological and physical criteria have been weighed and when deciding among multiple streams within a given area/Unit.

Connectivity

Regulations that are more restrictive than those for Type 1 trout waters are unlikely to generate desired changes in trout populations and angling quality if trout in the stream reach are exposed to significant increases in angling mortality when they emigrate to waters with less restrictive regulations. Seasonal movements of trout within streams may be extensive depending upon their needs for foraging, spawning, thermal refuge, or other life history requirements. The length of stream on which more restrictive regulations are applied should be relatively large to buffer effects of angling mortality on trout whose range of movement exposes them to higher angling mortality in adjacent stream reaches.

Trout less than 12 inches long generally move less than one mile during summer months when most angling mortality occurs. By contrast, the summer range of movement for trout larger than 12 inches is frequently greater than one mile. Fall and winter ranges of movement are usually substantially larger than in summer. Therefore we recommend that stream sections where regulations that are more restrictive are applied should be a minimum of two miles long although segments that are at least five miles long are more likely to buffer effects of angling mortality in adjacent stream reaches.


Criteria For Selection Of Trout Streams With Gear Restriction Regulations
Is angler fishery dominated by trout?
NO
STOP
YES
Is mean size-at-age for age 2 fish at or above state average?
NO
STOP
YES
Is natural mortality rate HIGH?
YES
Do geographical, social or political factors warrant further consideration?
NO
YES
NO
Is fishing mortality rate LOW?
YES
Do geographical, social or political factors warrant consideration?
NO
YES
NO
Good candidate for further consideration.
STOP
Phase 1: BIOLOGICAL
Is stream reach 2 miles or greater in length?
NO
STOP
YES
Is there assured public access?
NO
STOP
YES
Very Good Candidate
Consider other factors such as geographical distribution, connectivity issues, social aspects, etc.
Phase 2: PHYSICAL

This order shall be assigned number FO-213.04, and is titled “Criteria for Selection of Trout Streams with Gear Restriction Regulations”.

This order shall take immediate effect November 7, 2003, and shall remain effective until rescinded.